

The 2nd Donglu Astrophysics Forum

Milky Way and Cosmology in the Era of Wide Field Surveys

Handbook

August 31- September 2, 2022

Kunming, Yunnan

South-Western Institute for Astronomy Research, Yunnan Univ.



The 2nd Donglu Astrophysics Forum: Milky Way and Cosmology in the Era of Wide Field Surveys

Rationale:

The rapid advance of technology has opened up new windows of astronomical research, enabling one to survey the universe in an unprecedented way — wider, deeper and faster, revealing for example large numbers of rapidly evolving transients, including the counterparts of multi-messenger sources. While the huge amounts of multi-epoch and multi-band data yielded by such large sky-coverage surveys allow us to address a number of forefront problems, from stellar astrophysics, the structure and evolution of the Milky Way, to the large-scale structure of the universe, they also pose serious challenges to data reduction and analysis, from fast real-time image processing, high-precision astrometric and photometric calibration, to robust transient identification and classification.

This conference aims to bring together experts from three communities: wide-field surveys, stellar astrophysics and Galactic structure and evolution, and cosmic transients and cosmology. Building on the current state of the art, we will review the recent progresses, discuss the forefront problems, and foster potential collaborations for future studies.

Conference Themes:

The conference shall cover three main topics:

- A. Wide field surveys (Facilities, scientific drivers and survey strategies; Data reduction and calibration; Transient identifications and classifications).
- B. Stellar astrophysics and Galactic structure and evolution (Stellar structure and evolution, binarity, variable stars; Extremely metal poor stars; Galactic structure and evolution).
- C. Cosmic transients and cosmology (GW events and EM counterparts, SNe, GRBs, TDEs, QSOs/AGNe, FRBs; Hubble tension).

Scientific Organizing Committee:

Jinming Bai (YNAO, P.R. China), **Zigao Dai** (USTC, P.R. China), **Subo Dong** (PKU, P.R. China), **Junhui Fan** (Guangzhou Univ. , P.R. China), **Zhanwen Han** (YNAO, P.R. China), **Yipeng Jing** (SHJU, P.R. China), **Ji'an Jiang** (NAOJ, Japan), **Xiaowei Liu** (YNU, P.R. China; co-chair), **Xiangdong Li** (Nanjing Univ. , P.R. China), **Enwei Liang** (Guangxi Univ. , P.R. China), **Weipeng Lin** (SYSU, P.R. China), **Shude Mao** (THU, P.R. China), **Tinggui Wang** (USTC, P.R. China), **Xiaofeng Wang** (THU, P.R. China), **Christian Wolf** (ANU, Australia), **Xuefeng Wu** (PMO, P.R. China), **Renxin Xu** (PKU, P.R. China), **Ji Yang** (PMO, P.R. China), **Feng Yuan** (SHAO, P.R. China), **Weimin Yuan** (NAOC, P.R. China), **Bing Zhang** (UNLV, US; co-chair), **Li Zhang** (YNU, P.R. China), **Shuangnan Zhang** (IHEP, P.R. China), **Gang Zhao** (NAOC, P.R. China), **Zonghong Zhu** (BNU, P.R. China)

Notes to the Participants

1) Venue & link:

Online zoom link (the link and meeting number will be the same for all three days conference)

The 2nd Donglu Astrophysics Forum Day 1 – Day 3:

Beginning time: 2022-8-31 08:30 (Beijing time)

<https://zoom.us/j/4724454184?pwd=a3VDZnFYb3ErVkVxdUpoRUk5bkdjQT09>

Conference id: 472 445 4184

Password: swifar

Onsite: South-Western Institute for Astronomy Research, YNU

Auditorium, Astronomy Building, Yunnan University Chenggong Campus

2) time table

Beijing time	Central Europa time	Japanese time	Australian Eastern time	US Pacific time
8:00-12:00	2:00-6:00	9:00-13:00	10:00-14:00	17:00-21:00 (-1 day)
14:00-18:00	8:00-12:00	15:00-19:00	16:00-20:00	23:00 (-1 day) -3:00

3) Local Organizing Committee:

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Conference Agenda

Day 1: Wednesday, August 31st, 2022: Large-scale sky surveys			
Time (Beijing)	Speaker	Title	chair
8:50-9:00	Xiaowei Liu (YNU)	Opening remark	Li Zhang
9:00-9:30	Shuangnan Zhang (IHEP)	Review on space-borne high energy facility	
9:30-10:00	Christopher Onken (ANU)	SkyMapper Southern Survey: Progress, Outlook, and Lessons Learned	
10:00-10:20	Liping Xin (NAOC)	GWAC and its progress	
10:20-10:40	Break and group photo		
10:40-11:00	Haibo Yuan (BNU)	Photometric calibration of wide-field photometric surveys	Shenhong Gu
11:00-11:20	Peng Jia (Taiyuan Univ)	Data Processing Pipeline for Wide Field Sky Surveys with Machine Learning	
11:20-11:40	Shanhao Zhu (BNU)	Observing Time delay Strong Lensing with BNU 1.93m telescope	
11:40-12:00	Jing Wang (GXU/NAOC)	An Introduction of SVOM Mission & Conception of Post SVOM UV Mission	
Afternoon: Large-scale sky surveys II			
Time (Beijing)	Speaker	Title	chair
14:30-14:50	Xuefeng Wu (PMO)	Synergy of space borne and ground based facilities	Wentao Luo
14:50-15:10	Xiangkun Liu (YNU)	Multi-channel Photometric Survey Telescope	
15:10-15:40	Eli Waxman (Weizmann)	ULTRASAT	
15:40-16:00	Hu Zhan (NAOC)	The Chinese Survey Space Telescope	
15:00-16:20	Break and group photo		
16:20-16:40	Di Li (NAOC)	Seeing the Radio Sky through the Commensal Radio Astronomy FAST survey (CRAFTS)	Juntai Shen
16:40-17:00	Weimin Yuan (NAOC)	Einstein Probe	
17:00-17:20	Xu Kong (USTC)	The 2.5m Wide Field Survey Telescope (WFST)	
17:20-17:40	Zheng Cai (Tsinghua)	MULTiplexed Survey Telescope (MUST)	
17:40-18:00	Wentao Luo (USTC)	Dark matter halos of luminous AGNs from galaxy-galaxy lensing with the HSC Subaru Strategic Program	

Day 2: Thursday, September 1st, 2022: Cosmic transients			
Time (Beijing)	Speaker	Title	chair
8:30-9:00	Alessandra Corsi (Texas Tech University)	Multi-messenger observations of relativistic transients	Xilong Fan
9:00-9:30	Raffaella Margutti (UC Berkeley)	The Zoo of Jet-driven Stellar Explosions	
9:30-9:50	Zhiping Jin (PMO)	GRB-kilonova connection	
9:50-10:20	Mansi Kasliwal (Caltech)	Optical and infrared surveyors at Palomar Observatory: ZTF, PGIR and WINTER	
10:20-10:40	Break		
10:40-11:00	Xilong Fan (Wuhan)	GW detection	Xuefeng Wu
11:00-11:20	Weiyang Wang (PKU)	Polarized FRB Emission By Magnetospheric Bunches	
11:20-11:40	Rongfeng Shen (Sun Yat-Sen)	Quasi-periodic eruption X-ray sources and its possible origins	
11:40-12:00	Yuanpei Yang (YNU)	Rotation Measure Variation of Repeating Fast Radio Burst Sources	
12:00-12:20	Guangwei Li (NAOC)	Stellar flares detected with GWAC	
Afternoon: The structure and chemodynamic properties of the Galaxy			
Time (Beijing)	Speaker	Title	chair
14:00-14:30	Joss Bland-Hawthorn (Sydney)	The Galaxy in the post-Gaia era	Lei Hao
14:30-15:00	Chao Liu (NAOC)	The Galactic structure	
15:00-15:20	Haining Li (NAOC)	Galactic archaeology with metal-poor stars	
15:20-15:40	Maosheng Xiang (NAOC)	Milky Way Formation from the Age of Stars	
15:40-16:00	Break		
16:00-16:20	Juntai Shen (SJTU)	Structure and dynamics of the local group galaxies	Chao Liu
16:20-16:40	Chengdong Li (Oxford)	Our Galaxy's youngest disc	
16:40-17:00	Lei Hao (SHAO)	IFU study of nearby galaxy	
17:00-17:20	Xiaobin Wang (YNAO)	Small objects of solar system in photometry surveys	
17:20-17:40	Hechao Chen (PKU)	Detection of Hot Chromospheric Evaporation and A Possible Filament Eruption during Stellar Flares on An M Dwarf with X Ray Spectroscopy	

Day 3: Friday, September 2nd, 2022: Comic transients & variables			
Time (Beijing)	Speaker	Title	chair
8:30-9:00	Xiaofeng Wang (Tsinghua)	SNe in large area survey	Ji'an Jiang
9:00-9:20	Jujia Zhang (YNAO)	Supernova cosmology of MEPHISTO	
9:20-9:40	Jianming Wang (IHEP)	AGN accretion disk, compact object: merger and radiation	
9:40-10:00	Zhongxiang Wang (YNU)	Long-term periodic modulation of AGN found in optical transient surveys	
10:00-10:20	Break		
10:20-10:40	Christian Wolf (ANU)	The coming decade of QSOs: variability, orientation and mass evolution	Jirong Mao
10:40-11:00	Syed Uddin (TAMU)	Measurement of the Hubble Constant using Various Distance Calibrators	
11:00-11:20	Mouyuan Sun (XMU)	Deciphering the Melody of AGN UV/Optical Twinkling	
11:20-11:40	Ning Jiang (USTC)	The Discovery and Follow-ups of An Unique SMBH binary Candidate Approaching Final Merger	
11:40-12:00	Chenxu Liu (YNU)	AGN from HETDEX	
Afternoon: Stellar Astrophysics			
Time (Beijing)	Speaker	Title	chair
14:00-14:30	Zhanwen Han (YNAO)	Binary evolution	Ming Yang
14:30-15:00	Tuan Yi (XMU)	Hidden compact objects revealed by wide-field optical surveys	
15:00-15:20	Xinwen Shu (Anhui Normal)	X-ray QPEs: observations and models	
15:20-15:50	Shengbang Qian (YNAO)	Pulsating eclipsing binaries and massive pulsating stars	
15:50-16:10	Break		
16:10-16:30	Yong Shao (NJU)	Formation of black hole binaries as gravitational wave sources	Xinwen Shu
16:30-16:50	Qingzhong Liu (PMO)	Massive x-ray binary	
16:50-17:10	Jianrong Shi (NAOC)	Double- and Triple-line Spectroscopic Candidates from LAMOST DR9	
17:10-17:30	Wen Hou (NAOC)	Spectroscopically Identified Cataclysmic Variables from the LAMOST Survey. Period estimates.	
17:30-17:50	Shuai Xu (BNU)	Photometric Metallicities of 27 Million FGK Stars Based on Gaia Early Data Release 3	

List of participants:

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